Pressure Washers
and Accessories

COBALT SKID - CUSTOM

P/N: CUSTOM4040H & 3040H (C983040H)

Operators Manual
and Parts Book

Delco Pressure Washers - PN LIT-COBALT-DEL Rev. 7-08

FNA GROUP

LIMITED WARRANTY

At DELCO® CLEANING SYSTEMS, we distribute top quality industrial / commercial / personal pressure washers that are designed for heavy-duty use, maximum reliability, durability, and long life. Our pressure washers are built for all duty applications and steady use due to higher quality levels.

The manufacturer of this product agrees to repair or replace designated parts that prove defective within the warranty period of one (1) year listed in the chart. Specific limitations/extensions and exclusions apply, and are listed in the chart on page 3. This warranty covers defects in material and workmanship and not parts failure due to normal wear; abuse; accidental damage; negligence; improper use, maintenance, and storage. To make a claim under the terms of the warranty, all parts said to be defective must be available or returned (if requested) to DELCO® CLEANING SYSTEMS designated Warranty Service Center for warranty inspection. The judgments and decisions of the Warranty Service Center concerning the validity of warranty claims are final.

These warranties pass through to the end user. As a factory authorized and trained Warranty Service Center the factory will honor the terms of all component warranties and satisfy claims of the appropriate warranty provisions.

Normal wear items include, but are not limited to, Valves and Seals, which are not covered by this warranty.

This Warranty replaces all other warranties, express or implied, including without limitation any warranties of merchantability or fitness for a particular purpose and all such warranties are hereby disclaimed and excluded by the manufacturer. The Manufacturer's warranty obligation is limited to repair and replacement of defective products as provided herein and the Manufacturer shall not be liable for any further loss, damages, or expenses – including damages from shipping, accident, abuse, acts of God, misuse, or neglect. Neither is damage from repairs using parts not purchased from the manufacturer or alterations performed by non-factory authorized personnel. Failure to install and operate equipment according to the guidelines put forth in the instruction manual shall void warranty.

This warranty does not cover the following: damage resulting from shipping (claims must be filed with freighter), accident, abuse, act of God, misuse, or neglect. Neither is damage from repairs or alterations performed by non-factory authorized personnel or failure to install and operate equipment according to the guidelines put forth in the instruction manual.

The manufacturer will not be liable to any persons for consequential damage, for personal injury, or for commercial loss.

LIMITED WARRANTY (cont)

Parts / Components	Warranty Period and Details
High Pressure Pumps	Five (5) year limited manufactuer warranty on pump workmanship and defects in material. Lifetime on forged brass manifold. Warranty does not apply to failures on other pump parts due to: • Freight damage • Freeze damage • Damage caused by parts or accessories not obtained from / or approved by Delco • Normal wear of moving parts or components affected by moving parts.
Engines	Covered by engine manufacturer warranty. See engine manual.
Electric Motors (if applicable)	One (1) year from date of first start up.
Burners (hot water machines)	One (1) year from date of first start up.
Hot Water Burner Coil (hot water machines)	Five (5) years from date of first start up. Warranty only covers workmanship or defects of material. Warranty does not apply to: • Freeze Damage • Over Pressure burst damage caused by improper maintenance of safety devices.
Frame	One (1) year from date of first start up.
Accessories	Ninety (90) days. Includes tips, guns, wands,

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IMPORTANT SAFETY PRECAUTIONS

IMPORTANT:
Please read the following instructions before installing and operating this equipment.

DANGER

THIS EQUIPMENT CAN BE HAZARDOUS TO OPERATOR SAFETY AND ONLY AUTHORIZED PERSONNEL WHO HAVE READ AND UNDERSTAND THE INSTALLATION AND OPERATION MANUAL SHOULD BE PERMITTED TO OPERATE THIS EQUIPMENT. DO NOT LEAVE WAND UNATTENDED WHILE EQUIPMENT IS RUNNING.

Failure to follow all cautionary warnings and procedures may result in serious or fatal injury and/or property damage including, but not limited to: fire, severe burns, concussion from explosion, electrocution, scalding, penetration by pressurized water, chemical reaction, asphyxiation, cuts, contusions, laceration, and loss of body parts and/or life.

DO'S

1 . ALWAYS WEAR SAFETY GLASSES, GOGGLES or FULL FACE SHIELD; GLOVES, and when spraying acids WEAR RAIN GEAR. NEVER RUN ACIDS THROUGH THE PUMP ON THIS EQUIPMENT.

2. USE ONLY THE SAME SIZE NOZZLE SUPPLIED WITH THIS EQUIPMENT.

3. CHECK YOUR BATTERY FOR WATER LEVELS AND MAINTAIN A GOOD CHARGE.

4. USE ¾" (inch) x 50' (foot) GARDEN HOSE FOR WATER SUPPLY-.

5. USE A CLEAN FUEL CAN FOR REFUELING UNIT.

6. USE CLEAN DIESEL FUEL OR KEROSENE. NO ADDITIVES. Fill fuel tank each evening. This will help minimize condensation in fuel tank, and prolong fuel pump life.

7. Always follow chemical manufacturer's recommendations in use of chemicals with this equipment. Immediately after using chemical solutions through this equipment, flush thoroughly with clear water.

8. Disconnect all electrical power before performing any maintenance on this equipment.

9. Make sure positive is always positive and negative is always negative to keep from shorting out.

10. When storing this equipment in freezing weather conditions, this equipment must be drained thoroughly; and the plumbing system charged with a 50% solution of permanent type antifreeze. Antifreeze should be used when the equipment is not in service for prolonged periods or is being transported in freezing weather. NOTE: Antifreeze must be flushed out of equipment thoroughly before any cleaning project begins. Failure to do so could result in damage to paint or chemical attack on painted surfaces.

11. Use a water softener on your water system if it is high in mineral content (HARDNESS). Failure to do so will result in lime build-up in plumbing systems.

12. Use only manufacturer approved components when replacing parts on this equipment. Failure to do so may create operating conditions that are hazardous to personal health, safety, and will void the warranty.

13. Use only recommended oil in pump.

14. Always cool down coil.

DO NOT'S

DO NOT - UNDER ANY CIRCUMST ANCES - POINT THE HIGH PRESSURE NOZZLE AT YOURSELF , OTHER PEOPLE, OR ANIMALS!

1. DO NOT use an undersized discharge nozzle.
2. DO NOT disconnect the pressure hoses or wand while the equipment is HOT, PRESSURIZED or RUNNING.
3. DO NOT operate this equiopment without sufficent water supply to the pump.
4. DO NOT operate this equipment without proper ventilation or in a closed space.
5. DO NOT use any type of fuel other than # 2 diesel, kerosene or # 1 home heating oil.
6. DO NOT leave wand unattended while equipment is running.
7. DO NOT point the stream of water from nozzle toward any person or animal (including the operator).
8. DO NOT touch exhaust stack, metal wand and hose on HOT WATER UNIT . THEY GET VERY HOT!
9. DO NOT obstruct the exhaust stack.
10. DO NOT run engine or burner within 25 feet of flammable meterials or dust.
11. DO NOT use this equipment around or near explosive enviroment of any kind.(Gas, paint, solvents, etc.)
12. DO NOT screw the pop-off vavle all the way in to prevent leaking or dripping.
13. DO NOT adjust the unloader-regulator valve (on trigger control units) to a pressure in excess of 200 PSI of equipments motor or pump rating.
14. DO NOT secure trigger gun in the open position (ON). Operate ONLY with your hand during operation to prevent injury.
15. DO NOT allow air into the water system through soap valve or loose fittings.
16. DO NOT operate the machine if the water pressure drops or is low.
17. DO NOT continue to operate this machine if burner fails to shut off when trigger is released (closed).
18. DO NOT continue to operate this machine if burner fails to light.
19. DO NOT smoke or operate this machine while filling or emptying fuel tank(s), or connecting/disconnecting tanks and fittings.
20. DO NOT operate this machine if coil becomes clogged or sooted.
21. DO NOT alter machine from manufacturer's design.
22. DO NOT attempt to pull beyound normal lenght.
23. DO NOT attempt to service this machine without first disconnecting the electrical service. Failure to do so may cause severe or *fatal electrical shock.*
24. DO NOT BY-PASS ANY SAFETY DEVICE ON THIS MACHINE!
25. DO NOT USE ANY TYPE OF INSECTICIDE, TOXICS, OR ACID THAT PRODUCE TOXIC FUMES, OR EXPLOSIVE MATERALS IN THE SOAP SUCTION SYSTEM OF THIS EQUIPMENT. USE ONL Y DETERGENTS PROVEN SAFE FOR HUMAN CONT ACT .

INSTALLATION

1. LOCATION -

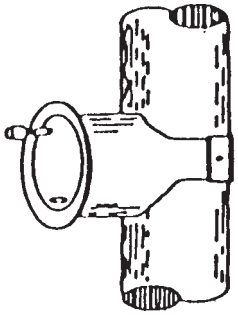
Avoid operating units in small areas or near exhaust fans. Adequate oxygen is needed for combustion or dangerous carbon monoxide will result. Stationary units should be installed in accordance with local plumbing and heating codes.

2. FUEL SUPPLY -

Oil Fired Units: Fill fuel tank with clean kerosene, No. 1 home heating fuel, or diesel fuel (without anti-gel additives.)

3. VENTING THE UNITS -

If the unit is to be used in an enclosed area it must be vented out.



Sample of Draft Regulator for Oil-Fired Units

The Draft Regulator (on oil-fired units) and chimney must be same size as the stack on the cleaner unit. Poor draft will cause the unit to soot-up and not operate efficiently. When installing the machine so the stack will be as straight as possible, protruding through the roof at a sufficient height to eliminate down-draft and to comply with local codes.

Always disconnect the battery when servicing your cleaner.

OPERATING THE MACHINE

PRE-OPERATING INSTRUCTIONS

1. Connect the swivel end of the discharge hose to the cleaning gun.
2. Attach the hose to the machine outlet.
3. Check the fuel level in the fuel tank. Add fuel if required. It is best to keep fuel tank full during non-working conditions.
4. Attach an ordinary garden hose to the float tank inlet. Turn on the water supply and let the float tank fill.
5. Connect the power cord to an adequately wired and grounded electrical source.
6. Place the end of the soap line into your soap solution container.

OPERATING INSTRUCTIONS

NOTE: On initial start up, or if machine has not been operated for several days, it is advisable to remove the nozzle from the cleaning gun and flush out any foreign material. Turn the switch to position 1 (pump) and let the unit run until clear water flows through the cleaning gun.

1. Turn on the water supply.
2. Add fuel if required. Check oil levels in pump and engine before starting.
3. Install the nozzle tip into the cleaning gun.
4. Close the soap valve. (turn fully clockwise)
5. Securely hold the cleaning gun and turn the switch to position 1(pump).
6. The recommended method of cleaning is:

    A. Wet entire surface and remove the loose dirt with water only,

    B. Turn on the soap by opening the soap valve (turn the handle counterclockwise). NOTE: The operating pressure of the machine will drop to nearly zero until the soap line is primed.

    C. Cover the entire surface to be cleaned with soap/water solution by applying from the bottom up. Allow the soap to stay on surface four to five minutes.

    D. Close the soap valve and wash at high pressure with water only from the top down.

NOTE: Soap will flush from the coil and discharge hose within a minute or two of operation.

    E. For hot water washing, turn the switch to position 2 (burner). CAUTION: If there is a sudden loss of pressure while washing with hot water, turn the burner off immediately and attempt to locate the problem while running cold water only. Failure to turn the burner off could cause excessive temperature and pressure build-up in the heating coil.

SHUT DOWN INSTRUCTIONS

1. If the burner is on turn control switch to position 1(pump).
2. Run water through the pump until cool water flows from the cleaning gun. Failure to do this could result in increased coil scaling.
3. Turn the control switch to off.
4. Turn off the water supply.
5. If the machine will be exposed to freezing temperatures, see winterizing procedure.

THINGS TO CHECK DAILY

1. Check oil level in pump.
2. Fill fuel tank at the end of each day's use to prevent condensation build-up in fuel system.
3. Fill soap container.
4. Check oil level in engine.

THINGS TO CHECK WEEKLY

1. Check and clean water float tank and pump inlet screen.
2. Check all hoses for leaks and damage. Repair or replace as needed.
3. Check pressure nozzle for wear. Replace if needed.
4. Check all nuts and bolts. Tighten as needed (DO NOT OVER TIGHTEN.)
5. Check all water connections for leaks. Tighten if loose.
7. Check belts and pulleys for wear and tightness. (DO NOT CHECK WHILE MACHINE IS RUNNING.)

MAINTENANCE OF COMPONENTS

PUMPS

1. Refer to pump section in this manual for your model of equipment.

2. Change pump oil after the first 25 hours of use. Subsequent changes should be every 250 hours or 3 months, whichever comes first.

   A. Disconnect power supply.

   B. Remove drain plug on pump and drain oil.

   C. I f the oil has water in it, it is important to flush out the pump with oil before refilling pump with the proper oil.

3. Refilling: Replace drain plug and fill slowly to the dot in the center of sight glass, or th the proper level on dip stick. Do not over fill.

4. Use a high quality 30 wt. non-detergent oil.

OIL BURNERS

1. BLOWER FAN: Clean blower fan in burner housing once a year or as often as needed. Dirt and deposits will reduce air delivery and affect combustion.

2. FUEL NOZZLE: Keep tip free of surface deposits wiping with a clean, solvent saturated, cloth rag. The nozzle should be changed once a year for maximum heating and emision control.

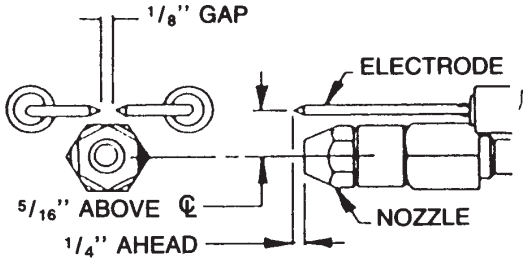
3. FUEL FILTER: Clean or replace every 400 hours or 3 months, whichever comes first (or as needed). This will help prolong fuel pump life and burner efficiency.

DESCRIPTION
Racor Water Separator

4. FUEL TANK: Drain one pint of fuel from bottom of fuel tank every 50 hours of use or every two weeks, whichever comes first. Check for water or contaminates in fuel. If any are present, drain and flush fuel tank then refill with clean fuel. This will prolong fuel pump life and burner efficiency.

5. ELECTRODES: Clean off carbon deposits on electrodes. To adjust elctrodes refer to figure and these instructions:

   A. TO REMOVE THE GUN ASSEMBLY: Disconnect the oil line at the burner fan housing. Remove gun holding nut on outside of housing. Loosen transformer hold-down screw and swing open transformer on hinges. Gun assembly can now be removed by turning 1/4 turn and lifting out and pulling down through this opening.



ELECTRODE ADJUSTMENTS - 12V BURNERS

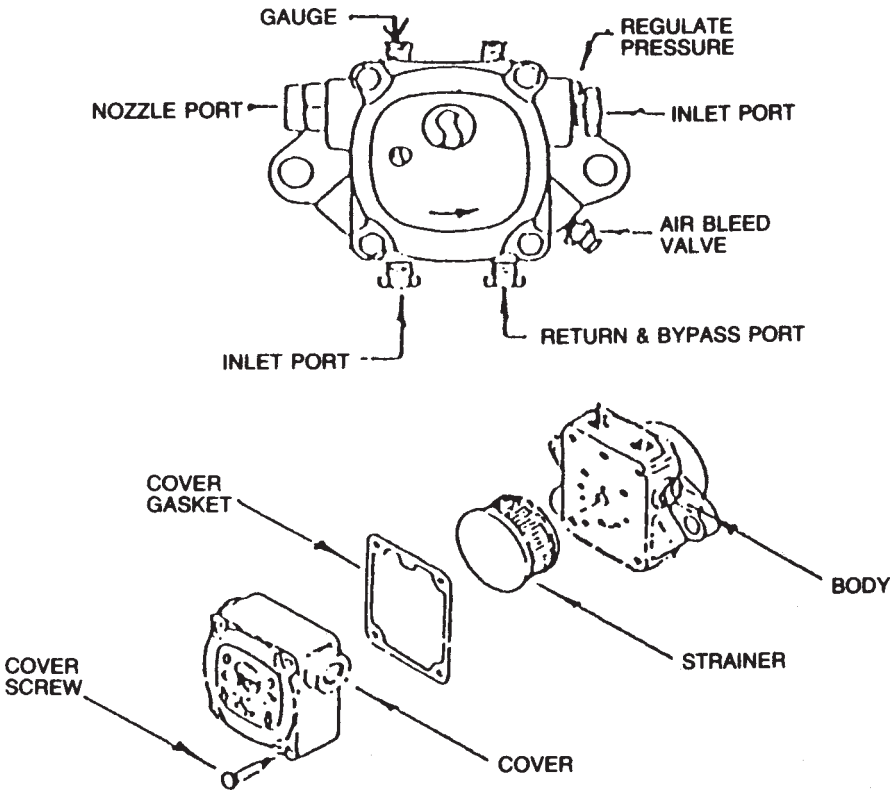
   B. SPACING OF ELECTRODES: The electrodes should be spaced 1/8 inch apart, 5/16 inch above the top of fuel nozzle and 1/4 inch from the center of fuel nozzle tip, to the electrodes.

6. FUEL PUMP: To bleed air out of fuel pump, open air bleed valve on side of fuel pump. Turn machine and burner ON. When fuel looks clear (NOT FOAMING), close air bleeding valve. Air is out of fuel lines and fuel pump.

   A. To check fuel pressure, plumb a 200 PSI guage into the port marked gauge. DO NOT USE BLEED VALVE PORT TO CHECK FUEL PUMP PRESSURE.

   B. To adjust fuel pressure, insert a small flat screwdriver into pressure regulator slot and turn clockwise to increase pressure and counter clockwise to decrease pressure. One full turn is about 10 PSI. Use a pressure gauge. normal operating pressure is 140 PSI. DO NOT EXCEED 150 PSI.

   C. Service the fuel pump once every 50 hours or 3 mnths by cleaning the fuel strainer screen. A clogged strainer or fuel filter will cause fuel pump stravation and dry the fuel pump up. The ONLY



   lubrication the fuel pump has is the fuel that runs through it. KEEP IT CLEAN for longer fuel pump life.

WINTERIZING

1. Shut off and disconnect the water supply.
2. Drain float tank.
3. Install antifreeze kit (available through local dealer.)
4. Remove nozzle from wand, and insert pick up hose and soap line into a bucket of 50% solution of antifreeze. Pump antifreeze throgh machine. Open and close trigger gun a few times to winterize unloader system. When antifreeze flows from the wand, shut the pump off. Disconnect antifreeze kit.

NOTE: BEFORE attempting to wash ANY painted surface, pump anti-freeze out of machine into a clean bucket and save for next use.

DE-SOOTING COIL

Poor grades of fuel oil or inadequate combustion air will cause heavy soot build up on the outside surface of the heating coil. This will insulate the coil and restrict air flow through the coil, further aggravating the soot build up.

To clean off soot, add Red Devil Soot Remover, using manufactures mixing instructions, or remove coil and clean thoroughly, or Call a Factory Authorized AAdvantage Dealer.

DE-LIMING OR DE-SCALING OF COIL

In hard water areas, or when using the wrong kind of soap, lime build-up inside the coil pipe will occur. Lime build-up will decrease the water temperature, water flow may eventually plug the coil.

It is recommended that a low pressure auxiliary pump be used if de-liming or de-scaling is needed. To install low pressure auxiliary pump.

1. Disconnect high pressure hose that goes between high pressure pump and coil inlet.
2. Connect about four feet of hose with screen to suction side of a low pressure auxiliary pump.
3. Connect a discharge hose between the low pressure auxiliary pump discharge side and the inlet.
4. Disconnect high pressure discharge hose from coil outlet.
5. Connect another 5-6 feet of hose to the coil outlet and run to a 5 gallon bucket.
6. Stick low pressure auxiliary pump suction hose w/screen into 5 gallon bucket.
7. Mix 2 gallons of water with 1 container of Coil Doctor.
8. Turn on pump and circulate the acid mixture through the coil system for about 40 minutes or until discharge solution stops foaming.

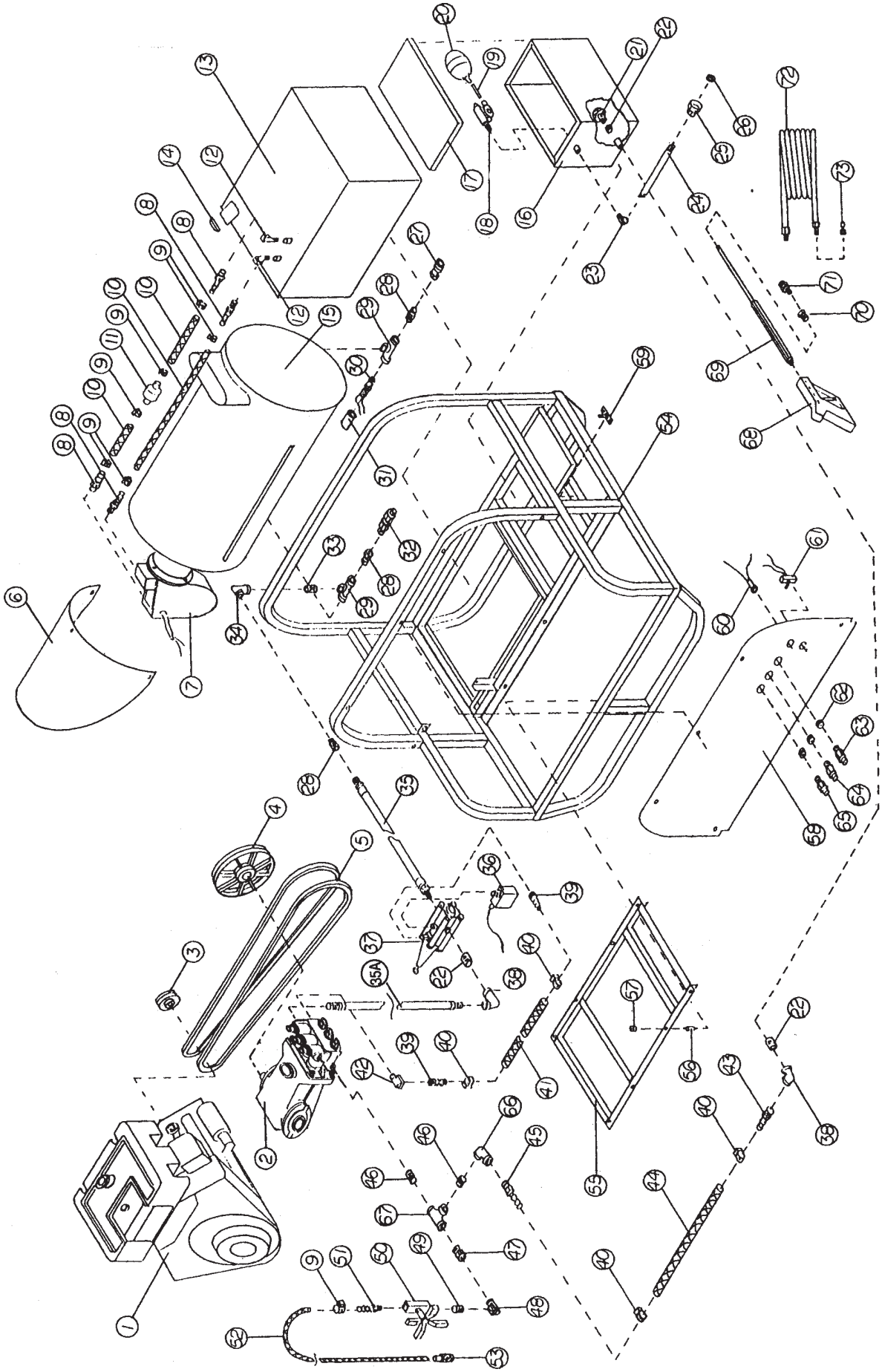
After cleaning, remove low pressure auxiliary pump assembly and connect all plumbing. Remove pressure tip from end of wand. Turn on pressure washer and run clean water through machine for about 5 minutes. This flushes out the coil and neutralizes any remaining acid. Replace pressure tip.

OR, call your Factory Authorized AAdvantage Distributor.

WARNING :
COIL DOCTOR IS ACID AND IS HARMFUL TO SKIN AND EYES.
ALWAYS FOLLOW MANUFACTURERS LABEL DIRECTIONS.

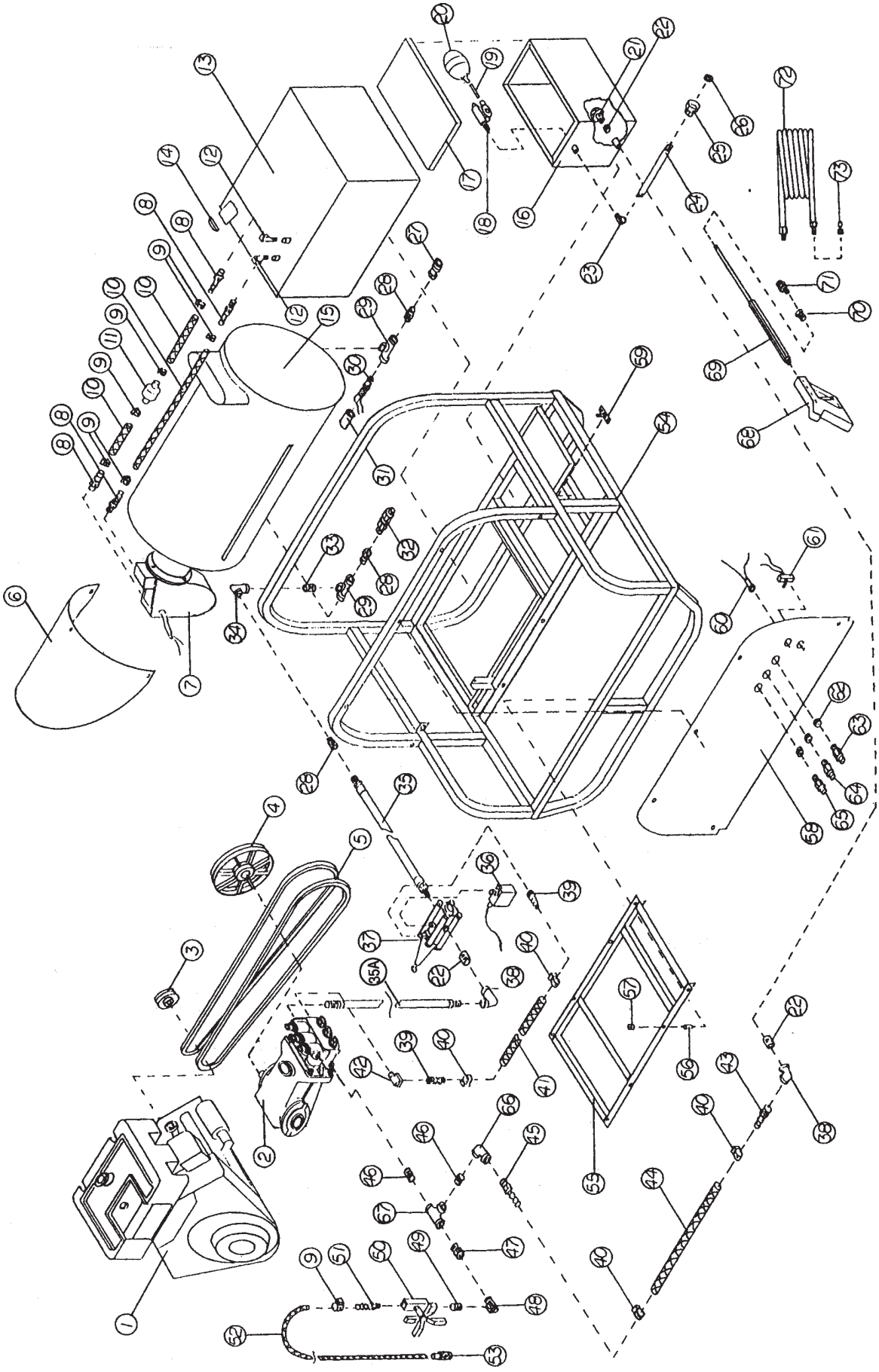
DIAGNOSIS AND MAINTENANCE

PROBLEM	PROBABLE CAUSE	SOLUTION
Low Pressure	Worn nozzle	Replace nozzle of proper size.
	Belt slippage.	Tighten or replace; use correct belt.
	Air leak in inlet plumbing.	Use PTFE liquid or tape.
	Pressure gauge inoperative or not registering accurately.	Check pressure with new guage and replace as needed.
	Relief valve stuck partially plugged or improperly adjusted.	Clean and reset relief valve to system pressure and correct by-pass. Check supply tank for contamination.
	Worn seat or valves.	Clean or replace with valve kit.
	Inlet suction strainer clogged or improprly sized.	Use adequate size for inlet pump connection and fluid being pumped. Clean frequently.
	Worn seals. Abrasives in pumped fluid, severe cavitation; inadequate water supply, stressful inlet conditions.	Install and maintain proper filter, check line size and flow available to pump. Install a C.A.T.
	Fouled or dirty inlet or discharge valves.	Clean inlet and discharge valve assemblies.
	Worn inlet or discharge valves.	Replace with valve kit.
	Leaky discharge hose.	Replace hose. Check connections.
Pulsation, pump runs extremely rough, pressure low.	Faulty Pulsation Dampener	Check precharge (should be 30-50%) of system pressure or replace as needed.
	Restricted inlet or air entering inlet plumbing.	Check filters and clean as needed. Check fittings and use PTFE liquid or tape for air tight connection.
	Stuck inlet or discharge valve	Clean or replace valve. Check supply tank for contamination.
Water leakage from under the manifold	Worn seals.	Replace with seal kit, check inlet pressure and system temperature, use Thermo Valve in by- inlet pressure regulator in inlet line.
Oil leak between crankcase and pumping section *Slight leakage.	Worn crankcase seals.	Replace crankcase seals
Oil leaking in area of crankshaft	Worn crankshaft seal Bad bearing .	Replace damaged seals. Replace bearing.
Excessive play in the end of the crankshaft.	Worn bearing .	Replace bearing.
Water in crankcase inside of the crankcase	Humid air condensing into water.	Change oil every 3 months or 500 hours intervels using premium grade 10W30 Non-detergent hydraulic oil, (other approved oil every month or 200 hours.)
	Leaking of crankcase seals or seals installed backward.	Replace seals. Follow proper installation procedure. Contact Cat Pumps supplier for crankcase servicing.
Oil leaking at the rear portion of the crankcase	Damaged or improperly installed oil guage, crankcase cover, or drain plug o-ring.	Replace oil gauge, crankcase cover or drain plug o-ring. Thread in oil guage and drain plug hand tight to avoid extruding o-ring.
Loud knocking noise in pump	Pulley loose on crankshaft.	Check key and tighten screw.|
	Worn bearing, connecting rod or crankshaft.	Consult Cat Pumps supplier for crankcase servicing.
	Stressful inlet conditions.	Install C.A.T.
Frequent or premature failure of the packing	Cracked or scored plungers Abrasive material in the fluid being pumped Check supply tank for contamination.	Replace plungers Install proper filtration on pump inlet plumbing.
	Excessive pressure and/or temperature of fluid being pumped.	Check pressure and fluid inlet temperature; be sure they are within specified range.
	Over pressure of inlet or discharge	Reduce pressure per specifications.
	Running pump dry.	DO NOT RUN PUMP WITHOUT WATER!
Strong surging at the inlet and low pressure at the discharge side.	Foreign particles in the inlet or discharge valve or worn inlet or discharge valves. contamination, Install and regularly clean filter. Do not pump	Check for smooth surfaces on inlet and discharge valve seats. Replace with kit if pitted or worn. Check supply tank for abrasive fluids.



SUPERSKID COMPONENT LOCATOR PARTS LIST

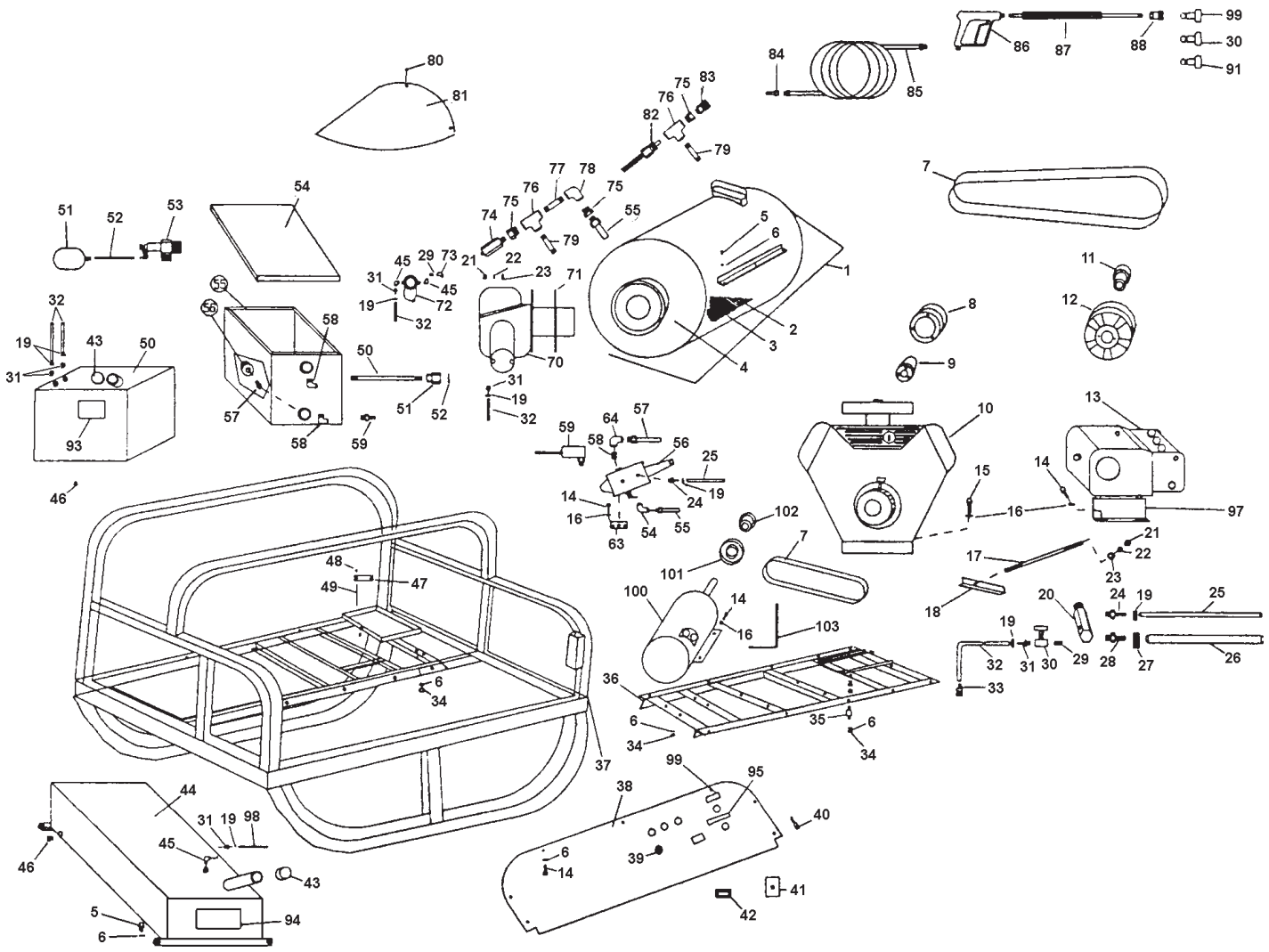
Ref. No.	Qty.	Part No.	Description
1	1	GX390	13 HP HONDA W/ ELEC. START ENGINE
2	1	TS1811	PUMP
3	1	D209	ENGINE PULLEY, 2TB36
N/S	1	D034	ENGINE BUSH, P1X1
4	1	D026	PUMP PULLEY, 2BK90H
5	2	D150	PUMP, V-BELT, B/BP42
6	1	T353	BURNER HOOD
7	1	W130	BURNER, 12VDC (WAYNE BURNER)
8	4	F010	1/4 X 1/4 IN. HOSEBARB
9	4	S063	1/4 IN. HOSE CLAMP
10	3 FT.	H012	1/4 IN. NYLON BRAID HOSE
11	1	C001	FUEL FILTER
12	1	F001	1/4 IN. BRASS STREET ELBOW 90°
13	1	T336	BURNER FUEL TANK
14	1	X007	CAP, FUEL CHROME
N/S	1	T114	BURNER HEAD WITH INSULATION
15	1	T239	COIL AND TANK ASSEMBLY
N/S	1	T013	COIL W/ INSULATION
16	1	T335	FLOAT TANK, S.S.
17	1	T366	FLOAT TANK LID, S.S.
18	1	V038	FLOAT VALVE
19	1	T230	FLOAT ROD 1/4 IN. BRASS
20	1	T002	FLOAT BALL
21	1	C004	3/8 IN. SCREEN
22	1	F046	HOSEBARB, 3/8 IN. X 5/8 IN. DRILLED
23	1	F189	1/2 IN. BRASS STREET ELBOW, 90°
24	1	F381	1/2 IN. X 12 IN. GALVANIZED NIPPLE
25	1	F044	GARDEN HOSE CONNECTION S1
26	1	F187	SCREEN AND O-RING
27	1	F034	3/8 IN. MALE QUICK CONNECT
28	1	F048	3/8 IN. X 1/2 IN. BUSHING
29	2	F127	1/2 IN. TEE F.S. 3000#
30	1	S019	HI-TEMP SWITCH
32	1	V048	PRESSURE RELIEF VALVE RV500B
33	1	F129	1/2 IN. X 4 GALV. NIPPLE
34	1	F222	1/2 GALV. 90° ELL SCH. 80
35	1	H007	3/8 IN. X 15 IN. HIGH PRESSURE HOSE
35A	1	H004	3/8 IN. X 26 IN. HIGH PRESSURE HOSE
36	1	S024	PRESSURE SWITCH
37	1	K-7	UNLOADER VALVE
N/S	1	T240	TANK, GAS 3005 SKID MS
38	2	F125	3/8 IN. GALV. 90° EL SCH. 120
39	1	F026	3/8 IN. X 3/8 IN. HOSE BARB
40	3	S064	5/8 IN. HOSE CLAMP #6
41	2 FT.	H011	3/8 IN. NYLON BRAID HOSE
42	1	F043	3/8 IN. BRASS STREET EL. 90°
43	1	F023	5/8 IN. X 3/8 IN. HOSEBARB
44	3 FT.	H008	5/8 IN. NYLON BRAID HOSE
45	2	F019	5/8 IN. X 1/2 IN. HOSEBARB
46	2	F005	1/2 IN. CLOSE NIPPLE, SCH. 80
47	1	F008	1/2 X 1/4 BRASS BUSHING



SUPERSKID COMPONENT LOCATOR PARTS LIST

Ref. No.	Qty.	Part No.	Description
48	1	F001	1/4 IN. BRASS STREET EL. 90°
49	1	F234	1/4 CLOSE NIPPLE, SCH. 80
50	1	V032	1/4 IN. METERING VALVE
51	1	F010	1/4 IN. X 1/4 IN. HOSEBARB
52	8 FT.	H012	1/4 IN. NYLON BRAID HOSE
53	1	V017	1/4 IN. SOAP CHECK VALVE
54	1	T441	FRAME
55	1	T499	SUB-FRAME
56	8	M010	MOTOR MOUNT
57	28	F119	5/16 HEX NUT
58	1	T498	CONTROL PANEL, S.S.
59	1	N/A	UNLOADER BRACKET
60	1	S217	BURNER LIGHT
61	1	S040	BURNER SWITCH, 15 AMP.
62	3	N005	GROMMET
63	1	-	n/a
64	1	-	n/a
65	1	-	n/a
66	2	F011	1/2 IN. GALV EL. 90°. SCH. 40
67	1	F006	1/2 IN. GALV. TEE, SCH. 40
68	1	-	TRIGGER GUN
69	1	-	WAND, 48 IN.
70	1	-	1/4 IN. FEMALE SOCKET Q.C.
72	1	-	3/8 IN. X 50 FT. 4000#SP
73	1	-	3/8 IN. FEMALE PLUG
N/S	4	F196	5/16 IN. X 1-3/4 IN. BOLT
N/S	4	F064	5/16 IN. X 1 IN. BOLT
N/S	4	F066	5/16 IN. X 1-1/2 IN. BOLT
N/S	11	F182	5/16 IN. X 3/4 IN. HHSMS

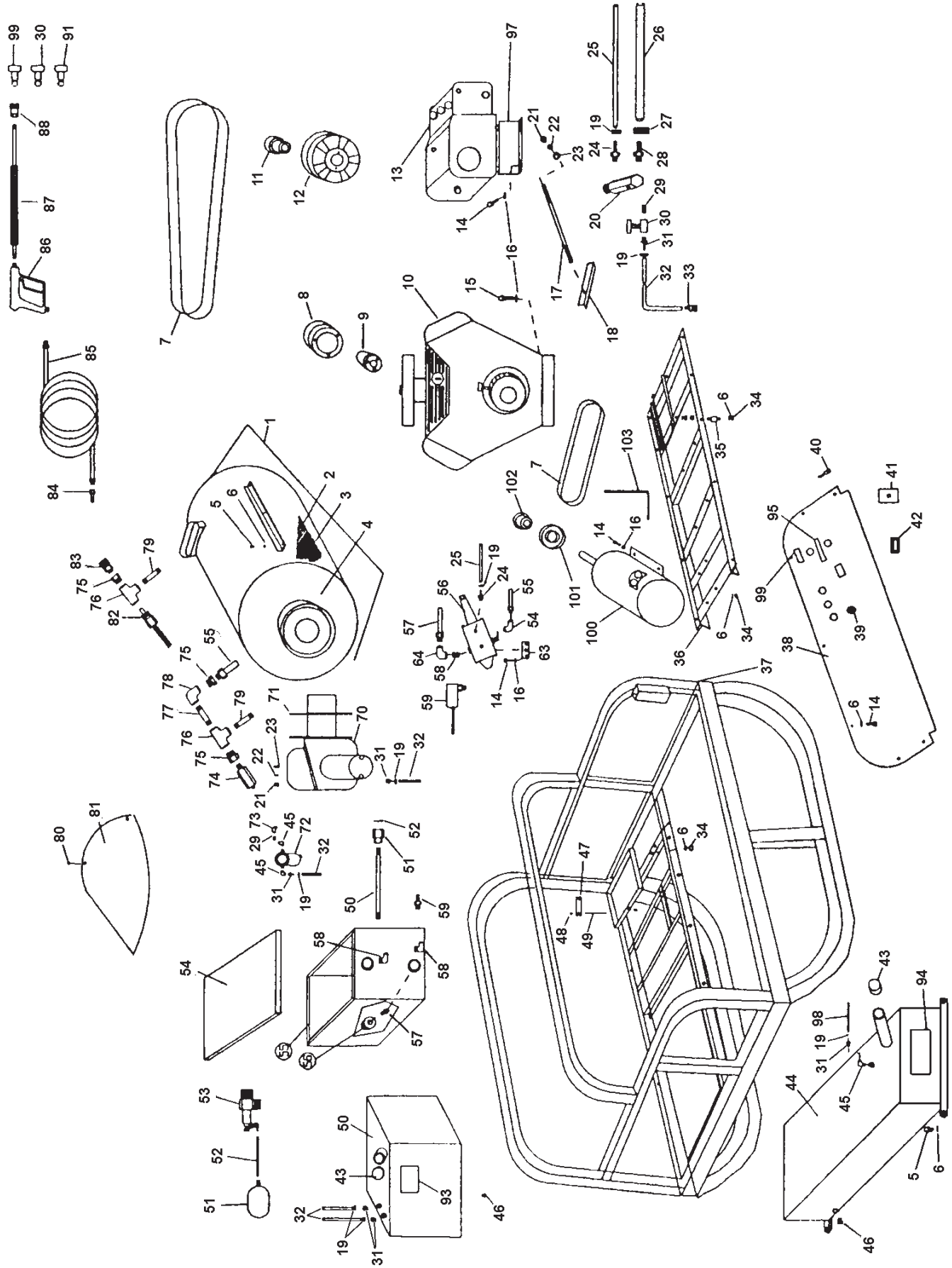
SKID COMPONENT LOCATOR



Ref. No.	Qty.	Part No.	Description
1	1	T316	COIL & TANK ASSEMBLY
4	1	T114-SS	BURNER HEAD
18	1	B004-SS	ADJ. ROD FOR CAT
	1	B008-SS	ADJ. ROD FOR GENERAL
19	1	B002-SS	ADJ. BRACKET CAT
	1	B007-SS	ADJ. BRACKET GENERAL
36	1	T706	SUB FRAME CAT
	1	T499-GEN-SS	SUB FRAME GENERAL
	1	T089-SS	SUB FRAME CAT, GENERAL
	1	T913	SUB FRAME GENERAL-GENERATOR NOT AVAILABLE FOR COBALT UNITS
37	1	T447	FRAME
	1	T008-SS	FRAME GENERATOR
44	1	COBALT339	COBALT - TANK GAS
	1	T904-SS	GAS TANK
50	1	T525N	TANK DIESEL
81	1	T355	BURNER HOOD 18"
103	1	T095-SS	SHEILD HEAT/F GENERATOR NOT AVAILABLE FOR COBALT UNITS

SKID COMPONENT LOCATOR PARTS LIST

Ref. No.	Qty.	Part No.	Description	STD	GEN -NOCOBALT
1	1	T239	COIL & TANK SKID	X	X
2	1	T013	COIL W/INSULATION 18" S/SKID	X	X
3	1	T804	INSULATION WRAP 18"	X	X
4	1	T114	HEAD BURNER W/INSULATION	X	X
5	10	F182	SCREW 5/15"X 3/4"'HHSMSW	X	X
6	44	F078	WASHER LOCK 5/15"	X	X
7	2	D020	BELT-V BP48	X	X
	2	D150	BELT-V BP42		X
8	1	D209	PULLEY 2TB36	X	X
9	1	D034	BUSHING P1X1"	X	X
10	1	GX390	ENGINE 13HP HONDA	X	X
11	1	D039	BUSHING 24MM	X	X
12	1	D025	PULLEY 2BK100H		
	1	D026	PULLEY 2BK90H	X	X
13	1	TS1811	PUMP	X	X
	1				
14	13	F064	SCREW 5/16-18X1 HHCS	X	X
15	4	F341	SCREW 5/16-18X1 3/4 HHSMS	X	X
16	8	F074	WASHER FLAT STD 5/16"	X	X
17	1	B004	ADJ, ROD F/CAT PUMP	X	X
	1	B008	ADJ, ROD F/GEN PUMP		X
18	1	B002	ADJ, BRACKET F/CAT PUMP	X	X
	1	B007	ADJ. BRACKET F/GEN PUMP		X
19	9	S065	CLAMP #4	X	X
20	1	P921	MANIFOLD 1/2"BRASS S/SKID	X	X
21	4	F109	NUT HEX 3/8-16 ZP	X	X
22	4	F107	WASHER LOCK 3/8 ZP	X	X
23	4	F112	WASHER FLAT 3/8	X	X
24	2	F025	HOSEBARB 3/8X3/8 BRASS	X	X
25	24"	H011	HOSE NYLON BRAID 3/8"	X	X
26	28"	H008	HOSE NYLON BRAID 5/8"	X	X
27	2	S064	CLAMP 5/8" #10	X	X
28	1	F023	HOSEBARB 5/8" X 3/8" BRASS	X	X
29	2	F234	NIPPLE 1/4" X CLOSE SCH80	X	X
30	1	V033	VALVE METERING	X	X
31	6	F010	HOSEBARB 1/4X1/4	X	X
32	101"	H012	HOSE NYLONBRAID 1/4"	X	X
33	1	V019	VALVE CHECK W/SCREEN	X	X
34	26	F119	NUT HEX 5/16-18	X	X
35	8	M010	IMOUNT MOTOR	X	X
36	1	T499	SUB FRAME SKID	X	X
		T499-GEN	SUB FRAME GEN S/SKID		X
37	1	T441	FRAME SUPER SKID	X	X
38	1	T498	PANEL CONTPDL SKID S.S.	X	X
39	3	N005	GROMMET LARGE	X	X
40	1	S217	LIGHT AMBER 12V DC	X	X
41	1	S040	SWITCH TOGGLE	X	X
42	1	S013	HOUR METER 12V DC	X	X
43	2	X007	FUEL CAP CHROME	X	X
44	1	COBALT339	COBALT, TANK, GAS	X	X
45	3	F001	1/4" ST. ELBOW BRASS	X	X



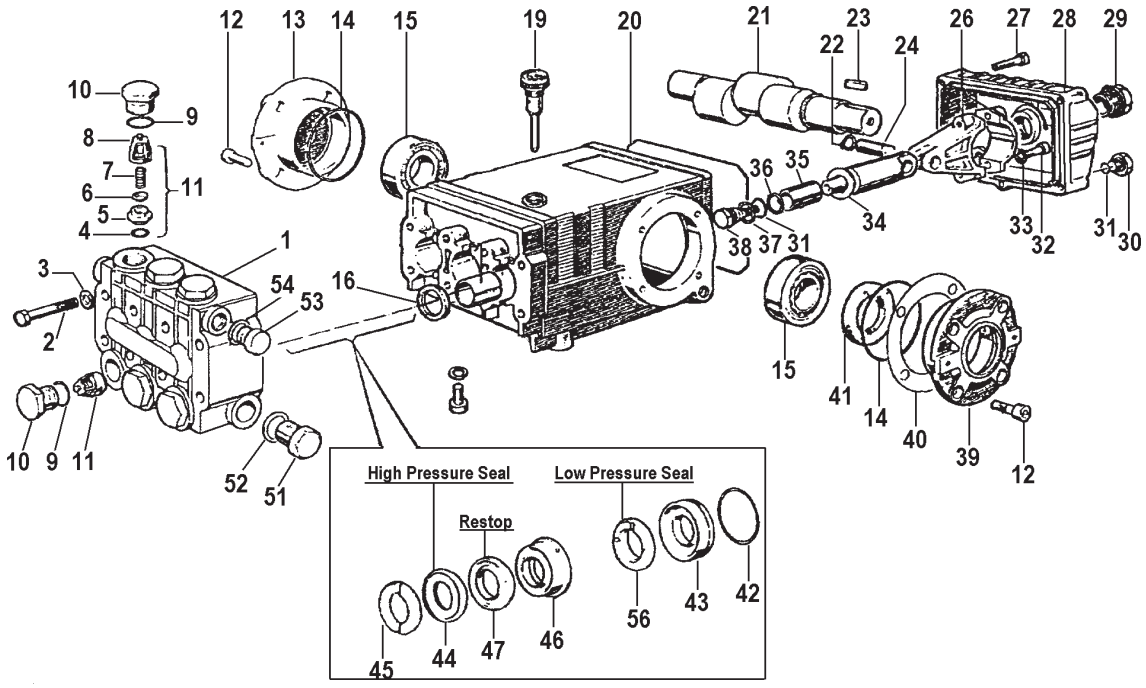
SUPERSKID COMPONENT LOCATOR PARTS LIST

Ref. No.	Qty.	Part No.	Description	STD	GENNOCOBALT
46	2	F178	1/4" PLUG BRASS	X	X
47	1	T737	BRACKET BATTERY HOLD DOWN	X	X
48	8	F103	NUT HEX 1/4-20	X	X
49	2	T003	ROD 1/4"	X	X
50	1	T198	TANK DIESEL SUPER SKID	X	X
51	1	T002	FLOAT BALL 5"	X	X
52	1	T230	FLOAT ROD	X	X
53	1	V038	FLOAT VALVE	X	X
54	1	T366	FLOAT TANK LID S/SKID	X	X
55	1	T335	FLOAT TANK S/SKID	X	X
56	1	C004	SCREEN 3/8"	X	X
57	1	F046	HOSEBARB 7/32" ORIFICE 5/8" X 3/8"	X	X
58	2	F189	1/2" ST. ELBOW BRASS	X	X
59	1	F019	HOSEBARB 5/8" X 1/2"	X	X
60	1	F381	NIPPLE 1/2" X 12"	X	X
61	1	F044	GARDEN HOSE CONNECTION S-1	X	X
62	1	F045	WASHER RUBBER	X	X
63	1	T903	BRACKET UNLOADER	X	X
64	2	F125	ELBOW 3/B"	X	X
65	1	H004	HOSE RI 3/8" 'X 26" 3600#	X	X
66	1	V040	UNLOADER VALVE K7.2	X	X
67	1	H007	HOSE RI 3/8" X 15" 3600#	X	XX
68	1	F015	NIPPLE 3/8" X CLOSE SCH80	X	X
69	1	S024	PRESSURE SWITCH	X	X
70	1	B130	BURNER 12V DC	X	X
71	1	B071	GASKET BURNER	X	X
72	1	C022	FILTER RACOR WATER SEPARATOR	X	X
73	1	F093	1/4' ST. ELBOW 45 DEG, BRASS	X	X
74	1	V048	VALVE RELIEF 3/8"	X	X
75	3	F048	BUSHING ½ X $^3/_8$	X	X
76	2	F127	TEE ½" SCH80	X	X
77	2	F147	NIPPLE ½" X 4" SCH80	X	X
78	1	F303	ELBOW ½ SCH80	X	X
79	2	F152	NIPPLE ½" X 4" SCH80	X	X
80	8	F091	SCREW #10 X ¾" HHSMS	X	X
81	1	T353	BURNER HOOD 18"	X	X
82	1	S019	SWITCH HI-LIMIT W/GROUND	X	X
83	1	F034	SOCKET $^3/_8$" MALE Q.C.	X	X
84	1	F039	PLUG $^3/_8$ FEMALE Q.C	X	X
85	1	H146	HOSE R1 $^3/_8$ X 50'	X	X
86	1	H077	TRIGGER GUN ST2000	X	X
87	1	H027	WAND 48"	X	X
88	1	F037	SOCKET FEMALE ¼" Q.C.	X	X
89	1	NQC05500	NOZZLE #5.5 X 0 DEG.	X	X
90	1	NQC05515	NOZZLE #5.5 X 15 DEG.	X	X
91	1	NQC05540	NOZZLE #5.5 X40 DEG.	X	X
92	2	X017	DECAL LOGO	X	X
93	1	X231	DECAL WARNING NO GAS	X	X
94	1	X132	DECAL WARNING USE GAS ONLY	X	X
95	1	X012	DECAL PROTECT RED/BLACK	X	X
96	1	X179	DECAL OPERATION	X	X
97	2	P335	PUMP RAIL TALL		X
	2	P573	PUMP RAIL TALL	X	
98	1.167 in.	H132	HOSE FUEL LINE ¼"	X	X
99	1	X019	DECAL MADE IN USA	X	X

45947A PUMP PARTS LIST

Recommended Grades of Pump Oil:

High quality SAE #30 -40 non-detergent oil.



PUMP CAPACITY: 40 FLUID OUNCES

Ref No.	Qty.	Part No.	Description
1	1	IP 400-02	MANIFOLD
2	8	IP-400-04	HEX HEAD CAP SCREW (M8 X 70)
2	8	BF 029-165	HEX HEAD CAP SCREW (3500 PSI ONLY)
3	8	IP 400-06	FLAT WASHER (M8)
4	6	IP 100-09	O-RING (VALVE SEAT)
5	6	IP 100-11	VALVE SEAT
6	6	IP 100-13	VALVE
7	6	IP 100-15	VALVE SPRING
8	6	IP 100-17	VALVE GUIDE
9	6	PF 026-01	O-RING (VALVE PLUG)
10	6	IP 100-21	VALVE PLUG
11	6	IP 100-23	VALVE ASSEMBLY
12	8	IP 100-49	SCREW, M 18 X 16
13	1	IP 500-03	BEARING HOUSING (BLANK)
14	2	IP 500-05	O-RING (BEARING HOUSING)
15	2	IP 500-07	ROLLER BEARING
16	3	IP 500-09	OIL SEAL (PISTON GUIDE)
17	3	IP 500-11	BUSHING
18	1	IP 500-13	CRANKCASE
19	1	IP 500-15	OIL DIP GAUGE
20	1	IP 500-65	O-RING (CRANKCASE COVER)
21	1	IP 500-18	CRANKSHAFT (IP 304-12 PUMP)

45947A Pump Parts List Cont.

Ref No.	Qty.	Part No.	Description
21	1	IP 500-90	CRANKSHAFT (IP 305-14 PUMP)
21	1	IP 500-20	CRANKSHAFT (IP 255-16 PUMP)
22	6	IP 500-21	CIRCLIP
23	1	IP 500-23	KEY
24	3	IP 500-25	PISTON PIN
25	3	IP 500-27	PISTON GUIDE
26	3	IP 500-29	CONNECTING ROD
27	5	IP 500-31	SOCKET CAP SCREW (M6 X 30)
28	1	IP 500-33	CRANKCASE REAR COVER
29	1	IP 200-24	OIL SIGHT GAUGE
30	1	IP 200-26	OIL DRAIN PLUG
31	4	IP 200-22	O-RING (DRAIN PLUG)
32	6	IP 500-35	SOCKET CAP SCREW (M8 X 35)
33	6	IP 500-37	WASHER
34	3	IP 500-39	WASHER
35	3	IP 500-41	PISTON
36	3	IP 500-43	BACK-UP RING
37	3	IP 500-45	WASHER
38	3	IP 200-46	PLUNGER RETAINING SCREW
39	1	IP 500-47	BEARING HOUSING
40	2	IP 500-49	SHIM
41	1	IP 500-51	OIL SEAL (CRANKSHAFT)
42	3	IP 500-53	O-RING (PACKING RETAINER)
43	3	IP 500-55	PACKING RETAINER
44	3	IP 500-57	V-PACKING
45	3	IP 500-59	HEAD RING
46	3	IP 500-67	INTERMEDIATE RING
47	3	IP 500-71	RE-STOP RING
49	4	IP 100-50	SCREW, M 10 X 18
50	4	IP 100-51	WASHER, M 10.2
51	1	IP 100-45	CAP
52	1	IP 100-42	WASHER, M 21.5
53	1	IP 100-44	CAP
54	1	IP 100-41	WASHER, M 17.5
56	3	IP 100-36	SEAL, LOW PRESSURE

EFFECTIVE: 6.23.98

Repair Kits for Pump 45947A (for machines up to 3500 PSI)

RK 371-01 VALVE REPAIR KIT

Ref No.	Qty.	Part No.	Description
9	6	PF 026-01	O-RING (VALVE PLUG)
11	6	IP 100-23	VALVE ASSEMBLY

RK 711-02B PLUNGER SEAL REPAIR KIT

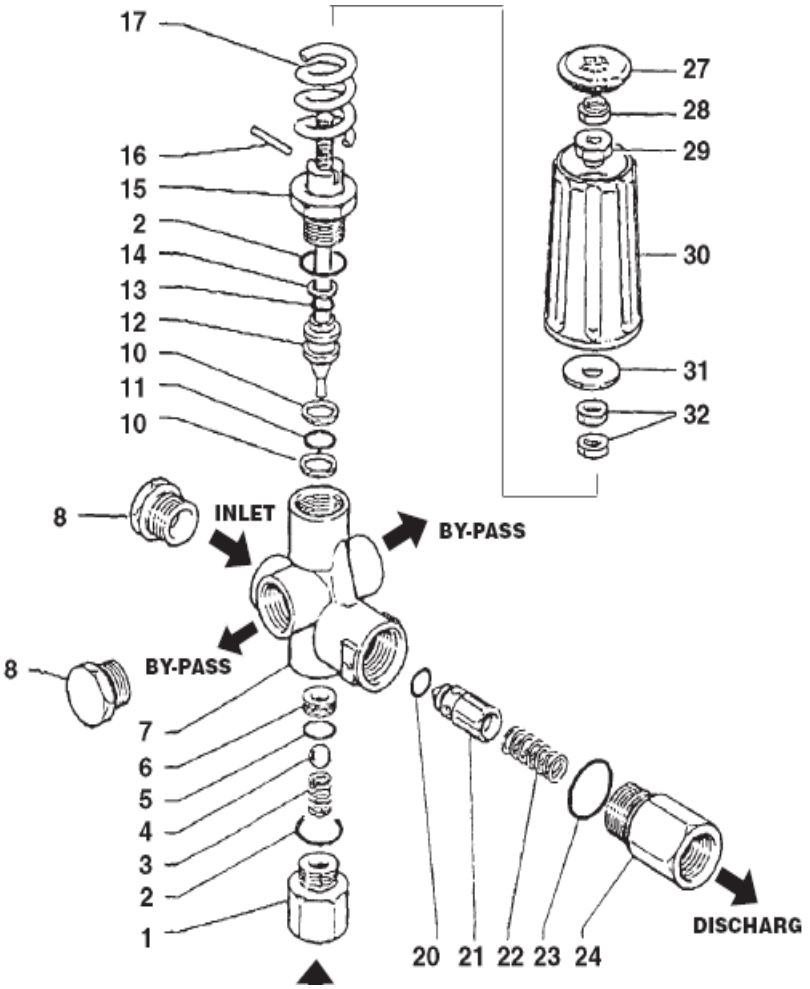
Ref No.	Qty.	Part No.	Description
42	3	IP 500-53	O-RING (PACKING RETAINER)
43	3	IP 500-55	PACKING RETAINER
44	3	IP 500-57	V-PACKING
45	3	IP 500-59	HEAD RING
46	3	IP 500-67	INTERMEDIATE RING
47	3	IP 500-71	RE-STOP RING
56	3	IP 100-36	SEAL, LOW PRESSURE

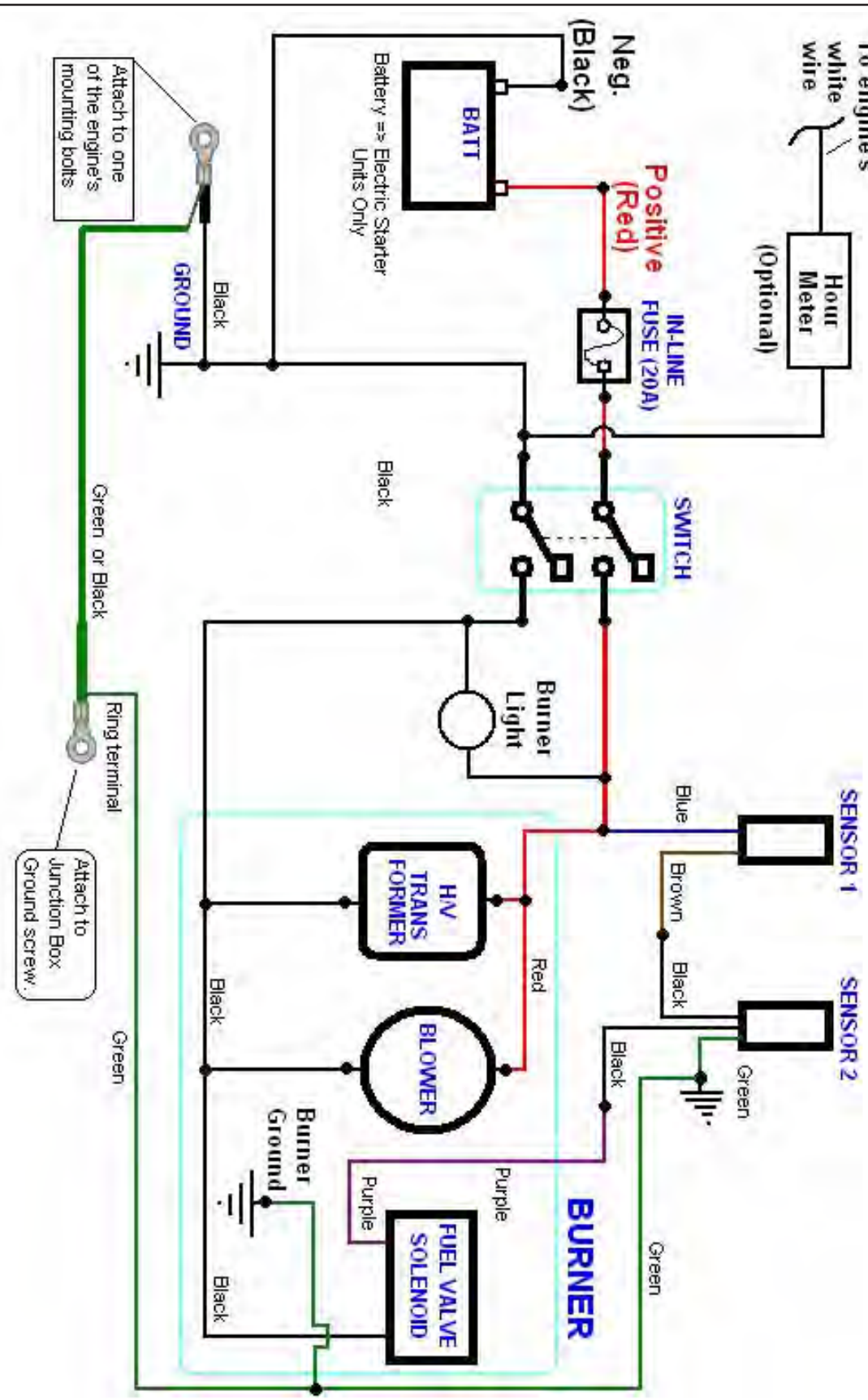
RK 711-03B V-PACKING KIT

Ref No.	Qty.	Part No.	Description
42	3	IP 500-53	O-RING (PACKING RETAINER)
44	3	IP 500-57	V-PACKING
45	3	IP 500-59	HEAD RING
47	3	IP 500-71	RE-STOP RING
56	3	IP 100-36	SEAL, LOW PRESSURE

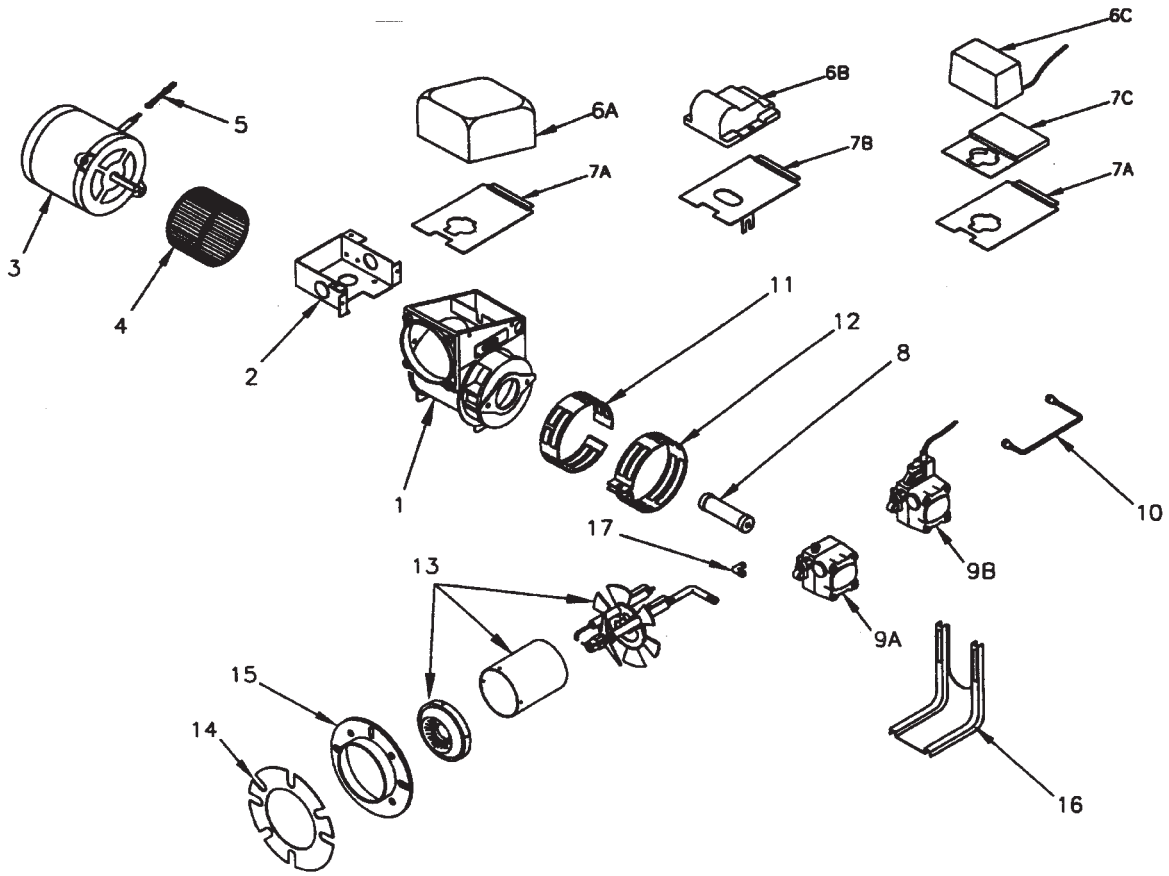
PULSAR3 – Y60.0006.80
UNLOADER VALVE

No.	Part No.	Description	Kit	Qty.
KIT	YKITPULSAR3KHP	Repair Kit	*	
1.	Y60005031	Inlet Fitting, 3/8 NPT-F		1
2.	Y10306800	O-ring, .676 ID x .070 CS	*	2
3.	Y60001551	Ball Spring		1
4.	Y14746100	SS Ball, 13/32	*	1
5.	Y10305901	O-Ring, .437 ID x .070 CS	*	1
6.	Y60025451	SS Seat, .551 OD x .335 ID	*	1
7.	Y60005735	Brass Body, 3/8 NPT		1
8.	Y60002531	Plug, 3/8 NPT		2
10.	Y10402100	Backup Ring	*	2
11.	Y10.317508	O-Ring, .424 ID x .103 CS	*	1
12.	Y60006123	SS Piston		1
13.	Y10317008	O-ring, .299 ID x .103 CS	*	1
14.	Y10402000	Backup Ring	*	1
15.	Y60006431	Piston Housing		1
16.	Y15102100	Locking Pin		1
17.	Y60003361	Blue Spring		1
20.	Y10321300	O-ring, .236 ID x .118 CS	*	1
21.	Y60005231	Check Valve		1
22.	Y60005351	SS Spring		1
23.	Y10307002	O-ring, .739 ID x .070 CS	*	1
24.	Y60005931	Outlet Fitting, 3/8 NPT-F		1
27.	Y60000284	Plastic Plug for Knob		1
28.	Y11458910	Zinc Nut, M8		1
29.	Y60000131	Insert M8		1
30.	Y60000384	Plastic Knob		1
31.	Y14372040	Washer, 9mm x 24mm		1
32.	Y11457331	Brass Nut, M8		2




To engine's white wire
Hour Meter
(Optional)
Neg. (Black)
BATT
Battery => Electric Starter Units Only
Positive (Red)
IN-LINE FUSE (20A)
Attach to one of the engine's mounting bolts
GROUND
Black
Black
SWITCH
Green or Black
Burner Light
Ring terminal
Attach to Junction Box Ground screw.
Green
Blue
SENSOR 1
Brown
Black
SENSOR 2
Green
Black
HV TRANS FORMER
Red
Black
BLOWER
Burner Ground
Purple
Purple
FUEL VALVE SOLENOID
Black
BURNER
Green

BURNER COMPONENTS - MODEL MSR



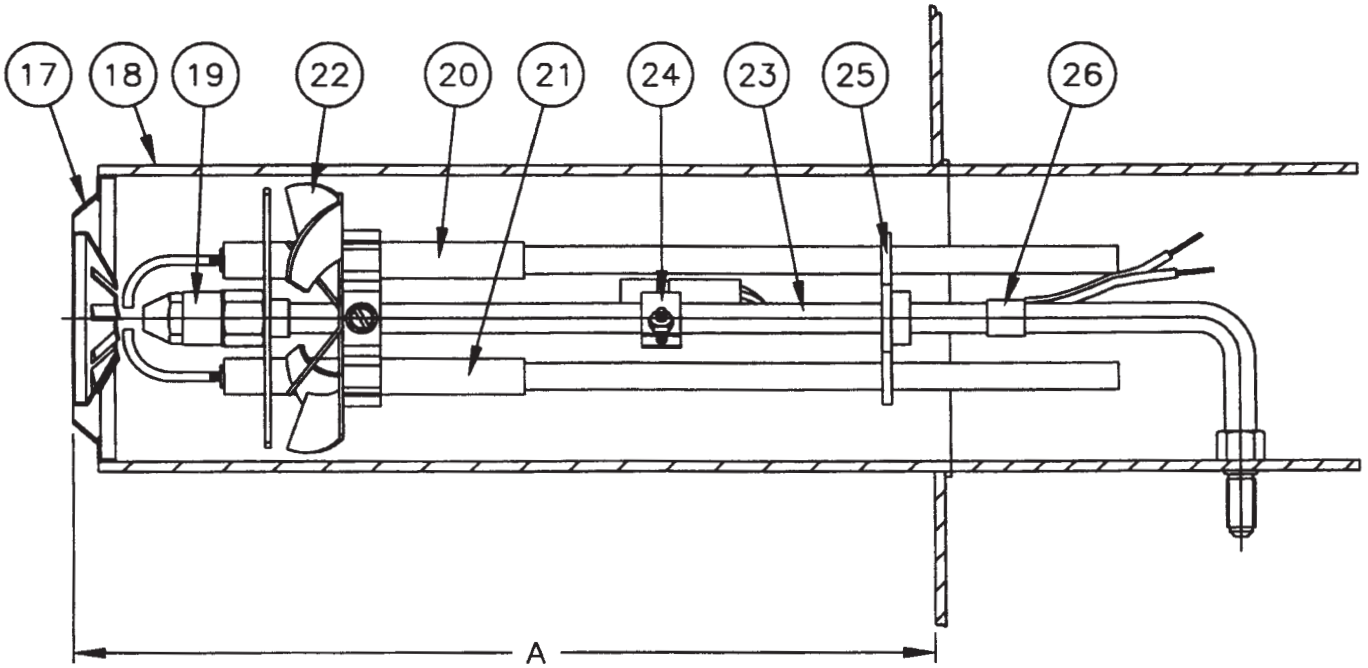
MSR BURNER MODEL, PART DESCRIPTION AND PART NUMBER WHEN ORDERING PARTS

NO.	DESCRIPTION	PART NO.
1	BURNER HOUSING	31841-036
2	JUNCTION BOX ASM	21319
3	MOTOR 1/8 H.P.	20627
4	BLOWER WHEEL 3 1/8 X 4 1/4	20673
	BLOWER WHEEL 3 1/2 X 4 1/4	21427
5	MOTOR CORD COVER	13029
6A	TRANSFORMER 115V	23101-M
	230V	23103-M
6B	FRANCE IGNITOR 115V	101050-001
6C	CARLIN IGNITOR 230V	31812-002
7A	COVER	21723-002
7B	COVER	21723-003
7C	COVER	100730-001
8	COUPLING	13424
9A	FUEL UNIT MODEL A	13495
9B	FUEL UNIT MODEL B	13634
9C	SUNTEC COMBO UNIT 115V	101128-001
	SUNTEC COMBO UNIT 230V	101128-002
10	6" OIL LINE ASSEMBLY	14451
	8" OIL LINE ASSEMBLY	14452
11	INNER AIR BAND	20601-002
12	OUTER AIR BAND	20602-002

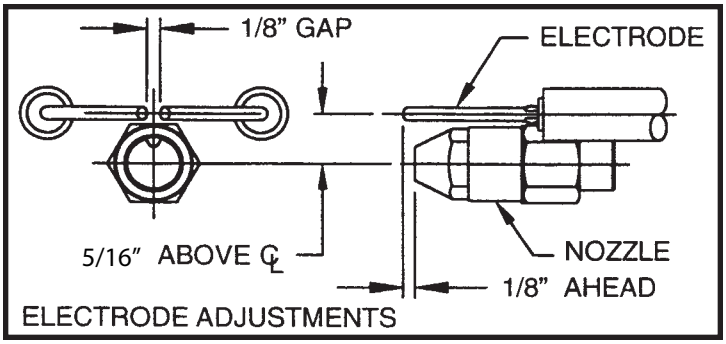
NO.	DESCRIPTION	PART NO.
13	AIR TUBE & GUN ASSM.	*
14	GASKET	12484
15	ADJUSTABLE FLANGE	2689-011
16	PEDEST AL MOUNT	21760-011
17	ELBOW	13494

*PART NUMBER SEE PAGE NEXT PAGE

AIR TUBE & GUN ASSEMBLY DETAILS MODEL MSR

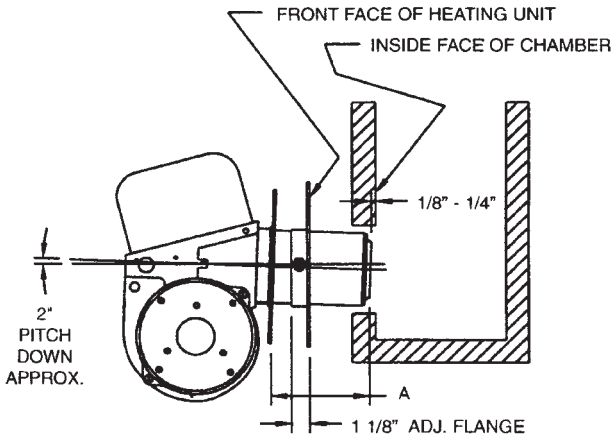


NOTE: BACKSIDE OF FLAMELOCK TO NOZZLE FACE.



ELECTRODE ADJUSTMENTS

TO DETERMINE THE AIR TUBE LENGTH



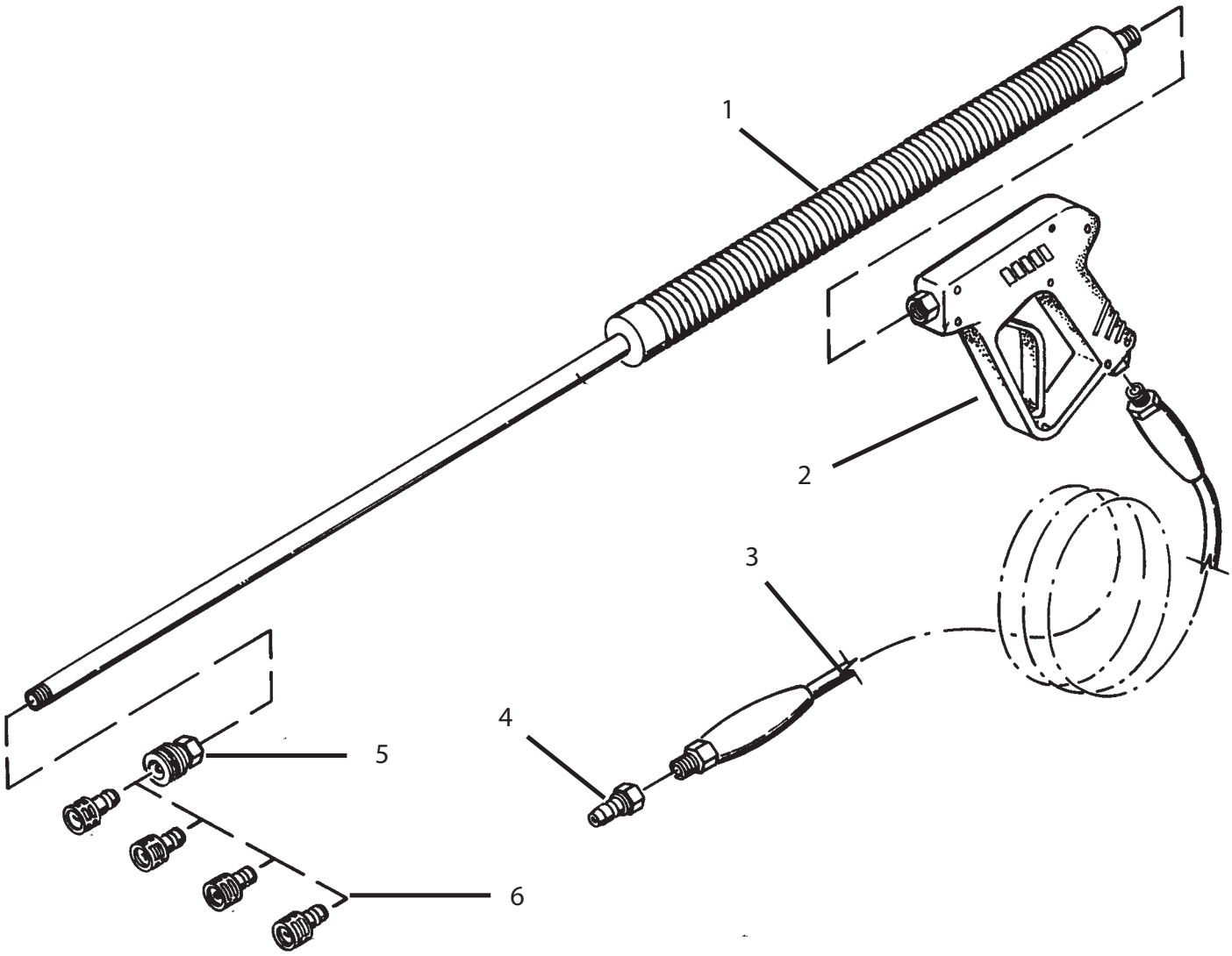
THE AIR TUBE LENGTH (DIM A) IS THE DISTANCE FROM THE FRONT OF AIR TUBE RETAINER FLANGE TO FACE OF AIR CONE.
NOTE: ADJUSTABLE FLANGE WIDTH.

NO.	DESCRIPTION	PART NO.
17	HEAD 0.85-0.75 #SC	100060
	0.75-1.00 #1A	14157
	1.00-1.35 #2A	14158
	2.00-2.25 #4A	14160
18	AIR TUBE	SEE NOTE
19	NOZZLE ADAPTER	21913-SER
20	RIGHT ELECTRODE ASSY.	SEE NOTE
21	LEFT ELECTRODE ASSY.	SEE NOTE
22	ELECTRODE SUPPOR T ASSY.	SEE NOTE
23	OIL PIPE ASSY.	SEE NOTE
24	CAD CELL BRACKET	13078
25	BUSS BAR SUPPORT	13276-002
26	CAD CEL ZIP TIE	100850-001

STANDARD AIR TUBE DIMENSIONS

AIR TUBE LGT. DIM.-A-	0.75-1.00	1.00-1.50	1.50-2.00	2.00-2.75
4″	31844-005	31845-005	31846-005	31847-005
6″	31844-021	31845-021	31846-021	31847-021
9″	31844-045	31845-045	31846-045	31847-045
12″	31844-069	31845-069	31846-069	31847-069
15″	31844-093	31845-093	31846-093	31847-093
18″	31844-117	31845-117	31846-117	31847-117

NOTE: WHEN ORDERING STATE BURNER MODEL MSR, SPEC #, PART DESCRIPTION, AIR TUBE COMBINATION, WHAT USABLE AIR TUBE LENGTH, (DIMENSION A), AND FIRING RATE.


1
2
3
4
5
6

GUN & HOSE ASSEMBLY COMPONENT LOCATOR PARTS LIST

Ref. No.	Qty..	Part No.	Description
1	1	55652A	48 in. insulated wand
2	1	54223A	Trigger Gun
3	1	55163A	50 Ft. hose assembly
4	1	197056	Female QC Plug
5	1	192275	Male QC Socket
6	1	8000321	Cleaning Nozzle 0 degree (#5 Orifice)
	1	8000322	Cleaning Nozzle 15 degree (#5 Orifice)
	1	8000323	Cleaning Nozzle 15 degree (#5 Orifice)
	1	8000324	Cleaning Nozzle 40 degree (#5 Orifice)

NOTES:

1111 E. Lake Francis Dr. • Siloam Springs, AR 72761 • 1-800-BUY-DELCO